What is claimed is:

A method for preparing a thin fiberstructured polymer web, comprising the steps of:

dissolving a polymer in a volatile solvent used as a polymer solvent to prepare a polymer solution;

spinning the polymer solution by electrospinning; and

forming a thin fiber-structured polymer web

2. The method as claimed in claim 1, wherein the volatile solvent is at least one having a high volatility selected from the group consisting of acetone, chloroform, ethanol, isopropanol, methanol, toluene, tetrahydrofuran, water, benzene, benzyl alcohol, 1,4-dioxane, propanol, carbon tetrachloride, cyclohexane, cyclohexanone, methylene chloride, phenol, pyridine, trichloroethane and acetic acid.

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3. The method as claimed in claim 1, wherein the volatile solvent is a mixed solvent comprising at least one relatively high-volatility solvent and at least one relatively low-volatility solvent, the relatively high-volatility solvent being selected from

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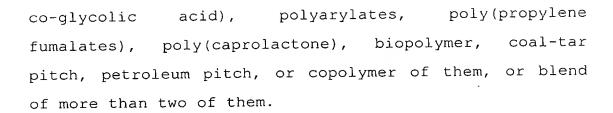
the group consisting of acetone, chloroform, ethanol, isopropanol, methanol, toluene, tetrahydrofuran, water, benzene, benzyl alcohol, 1,4-dioxane, propanol, carbon tetrachloride, cyclohexane, cyclohexanone, methylene chloride, phenol, pyridine, trichloroethane and acetic acid, the relatively low-volatile solvent being selected from the group consisting of N, N-dimethyl formamide (DMF), dimethyl sulfoxide (DMSO), N,N-dimethylacetamide (DMAc), 1-methyl-2-pyrrolidone(NMP), ethylene carbonate (EC), propylene carbonate (PC), dimethyl carbonate (DMC), acetonitrile (AN), N-methylmorpholine-N-oxide, butylene (BC), 1,4-butyrolactone (BL), carbonate carbonate (DEC), diethylether (DEE), 1,2-dimethoxyethane (DME), 1,3-dimethyl-2-imidazolidinone (DMI), dioxolane(DOL), ethyl methyl carbonate (EMC), (MF), 3-methyloxazolidin-2-on (MO), methyl formate propionate (MP), 2-methyletetrahydrofurane (MeTHF) and sulpholane (SL).

The method as claimed in claim 1, wherein the relative humidity in a working space for the electrospinning is 0 to 40 %.

5. The method as claimed in claim 1, wherein the temperature of the polymer solution during the

electrospinning is in the range from 40 $^{\circ}\text{C}$ to the boiling point of the solvent.

- 6. The method as claimed in claim 1, wherein the content of the polymer used in the preparation of the polymer solution is 0.1 to 40 wt.% based on the content of the solvent.
- 7. The method as claimed in claim 1, wherein the polymer is selected from the group consisting of 10 poly(vinylidene fluoride (PVDF), poly(vinylidene fluoride-co-hexafluoropropylene), polyacrylonitrile, poly(acrylonitrile-co-methacrylate), polymethylmethacrylate, polyvinylchloride, poly(vinylidenechloride-co-acrylate), polyethylene, polypropylene, nylon12, nylon-4,6, aramid, polybenzimidazole, polyvinylalcohol, cellulose, cellulose acetate, cellulose acetate butylate, polyvinyl acetates, poly(bis-(2-(2-methoxypyrrolidone-vinyl ethoxyethoxy))phosphazene) (MEEP), poly(propyleneoxide), 20 poly(ethylene imide) (PEI), poly(ethylene succinate), polyaniline, poly(ethylene sulphide), poly(oxymethylenecopolymer, poly(hydroxy oligo-oxyethylene), SBS acetate), poly(ethylene butyrate), poly(vinyl . 25 terephthalate), poly(ethylene oxide), collagen, poly(lactic acid), poly(glycolic acid), poly(D,L-lactic-



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8. The method as claimed in claim 7, wherein the polymer is mixed with an emulsion, or an organic or inorganic powder.

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The method as claimed in claim 1, wherein the collector is an anode comprising at least one selected from the group consisting of $LiCoO_2$, $LiMn_2O_2$, $LiMn_2O_4$, $LiNiO_2$, $LiCrO_2$, $LiVO_2$, $LiFeO_2$, $LiTiO_2$, $LiScO_2$, $LiYO_2$, $LiNiVO_4$ $LiNiCoO_2$, V_2O_5 and V_6O_{13} ; or a cathode comprising at least one selected from the group consisting of a carbon material including graphite, cokes or hard carbon, tin oxide, lithium compound of these materials, metal lithium and metal lithium alloy.

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7 10. The method as claimed in claim 1, wherein the collector has its upper part provided with a filtering medium.

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The method as claimed in claim 1, further comprising the step of compulsorily discharging air

containing a large amount of the solvent to the outside while injecting air into the working space during the electrospinning.

- 5 12. A thin fiber-structured polymer web obtained by the method according to claim 1.
- 13. A filter obtained by laminating the thin fiber-structured polymer web manufactured by the method according to claim 1.

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